Appl. No. : **10/811,784**
Filed : **March 29, 2004**

AMENDMENTS TO THE CLAIMS

Amendments to the claims are indicated in the following listing of claims, which replaces all prior listings of the claims.

1-10. (Canceled)

11. (Currently Amended) A suspension assembly for a bicycle, comprising:

a primary tube;

a piston rod supporting a piston and being capable of motion relative to said primary tube in a compression direction of said suspension assembly, said piston and said primary tube at least partially defining a first fluid chamber, wherein one of said primary tube and said piston rod is configured to be connected to a wheel portion of a bicycle and the other of said primary tube and said piston rod is configured to be connected to a frame portion of a bicycle;

a secondary tube at least partially defining a second fluid chamber, wherein said first fluid chamber and said second fluid chamber are filled with a liquid and wherein liquid flows from said first fluid chamber to said second fluid chamber in response to relative motion of said piston rod and said primary tube in said compression direction;

an inertial valve comprising an inertial mass, said inertial mass being within said secondary tube and not within said first fluid chamber, wherein said inertia mass does not surround said primary tube, said inertial mass configured to move axially relative to said secondary tube in generally a same direction as movement of said piston in response to a terrain-induced force tending to move said suspension assembly in said compression direction, said inertial valve having a first position and a second position, said inertial valve biased into said first position blocking a flow of liquid from said first fluid chamber to said second fluid chamber in said compression direction, said inertial valve permitting a flow of liquid from said first fluid chamber to said second fluid chamber in said second position in said compression direction; and

a floating piston within said secondary tube and separating a gas space of said secondary tube from a damping fluid space of said secondary tube.

12-14. (Canceled)

15. (Previously Presented) The bicycle suspension system of Claim 11, additionally comprising a stop surface configured to prevent said inertia mass from moving beyond said first position of said inertial valve in a direction opposite said second position.

16. (Currently Amended) A suspension assembly for a bicycle, comprising:

a first tube;

a second tube;

a piston rod supporting a piston and being capable of motion relative to said first tube in a compression direction of said suspension assembly, wherein one of said first tube and said piston rod is configured to be connected to a wheel portion of a bicycle and the other of said first tube and said piston rod is configured to be connected to a frame portion of a bicycle;

a first fluid chamber and a second fluid chamber, wherein said first fluid chamber and said second fluid chamber are filled with oil and wherein oil flows from said first fluid chamber to said second fluid chamber in response to relative motion of said piston rod and said first tube in said compression direction;

an inertial valve comprising an inertial mass, said inertial mass being within said second tube and not within said first fluid chamber, wherein said inertia mass does not surround said first tube, said inertial mass configured to move axially relative to said second tube in generally a same direction as movement of said piston in response to a terrain-induced force tending to move said suspension assembly in said compression direction, said inertial valve having a first position and a second position, said inertial valve biased into said first position blocking a flow of oil from said first fluid chamber to said second fluid chamber in said first position in said compression direction, said inertial valve permitting a flow of oil from said first fluid chamber to said second fluid chamber in said second position in said compression direction; and

a floating piston within said second tube and separating a gas space of said second tube from a damping fluid space of said second tube.

17-19. (Canceled)

20. (Previously Presented) The bicycle suspension system of Claim 16, additionally comprising a stop surface configured to prevent said inertia mass from moving beyond said first position of said inertial valve in a direction opposite said second position.

21. (Currently Amended) A bicycle ~~damper~~ suspension assembly, comprising:

a tube defining an axis;

a piston rod supporting a piston in sealed, sliding engagement with said tube, said piston and said tube defining a compression fluid chamber and a rebound fluid chamber;

~~a reservoir fluid chamber defined by said damper;~~

~~a fluid passage connecting said compression fluid chamber and said reservoir fluid chamber~~, an opening communicating with said compression chamber, wherein a damping fluid moves between said compression fluid chamber and said ~~reservoir~~ rebound fluid chamber in response to movement of said piston rod relative to said tube in a compression direction;

a floating piston configured to separate a damping fluid within said damper from a gas chamber, said damper comprising a valve configured to permit adjustment of a pressure within said gas chamber; and

an inertia valve comprising an inertia mass movable between a ~~first~~ closed position and ~~a second~~ an open position, said inertia mass ~~being within said reservoir fluid chamber and~~ not within said compression fluid chamber or said rebound fluid chamber, wherein said inertia mass does not surround said tube, said inertia mass configured to move in an axial direction generally aligned with said axis;

~~wherein, in said first position, said inertia mass blocks a flow of fluid through said fluid passage during movement of said piston in said compression direction, in a second position, said inertia mass permits a flow of fluid through said fluid passage during movement of said piston in said compression direction~~

a spring, said spring configured to apply a force to said suspension assembly tending to extend said piston rod relative to said tube;

wherein said spring and said damper cooperate, in the absence of a terrain-induced upward acceleration of said suspension assembly above a predetermined threshold sufficient to move said inertia valve to said open position, to prevent significant

compressive movement of said suspension assembly in response to rider-induced pedaling forces on said suspension assembly, and wherein said inertia valve is movable to said open position in response to a terrain-induced upward acceleration of said suspension assembly above said threshold to permit significant compressive movement of said suspension assembly.

22. (New) The bicycle suspension assembly of Claim 21, additionally comprising a stop surface configured to prevent said inertia mass from moving beyond said first position of said inertia valve in a direction opposite said second position.

23. (New) The bicycle suspension assembly of Claim 21, wherein said axial direction of movement of said inertia mass is non-coaxial with said axis of said tube.

24. (New) A bicycle suspension assembly, comprising:

a damper, said damper comprising:

a tube;

a piston rod supporting a piston in sealed, sliding engagement with said tube, said piston and said tube defining a compression fluid chamber and a rebound fluid chamber, wherein a damping fluid moves between said compression chamber and said rebound chamber during compression movement of said suspension assembly and said piston rod occupies a successively greater portion of said tube during said compression movement;

an opening communicating with said compression chamber;

an inertia valve comprising an inertia mass, said inertia valve having an open position wherein said inertia mass does not block said opening and a flow of damping fluid is permitted through said opening, said inertia valve normally biased to a closed position wherein said inertia mass is positioned to block said opening such that said flow of damping fluid through said opening is reduced relative to said open position of said inertia valve;

a spring, said spring configured to apply a force to said suspension assembly tending to extend said piston rod relative to said tube;

wherein said spring and said damper cooperate, in the absence of a terrain-induced upward acceleration of said suspension assembly above a predetermined threshold sufficient to

move said inertia valve to said open position, to prevent significant compressive movement of said suspension assembly in response to rider-induced pedaling forces on said suspension assembly, and wherein said inertia valve is movable to said open position in response to a terrain-induced upward acceleration of said suspension assembly above said threshold to permit significant compressive movement of said suspension assembly.

25. (New) The bicycle suspension assembly of Claim 24, additionally comprising a floating piston separating a gas space from damping fluid within said damper.

26. (New) The bicycle suspension assembly of Claim 25, wherein said floating piston resides within a reservoir chamber of said suspension assembly.

27. (New) The bicycle suspension assembly of Claim 24, additionally comprising a stop surface configured to prevent said inertia mass from moving beyond said closed position of said inertia valve in a direction opposite said open position.

28. (New) The bicycle suspension assembly of Claim 24, wherein said inertia mass moves in an axial direction that is non-coaxial with a longitudinal axis of said tube.